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THE GONOCOCCUS.¹

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UNLIKE the bacillus tuberculosis, the gonococcus has never made that impression on the medical mind that it should, and this is probably because the means of detecting it are not so certain as in the case of the former, and also because the diagnosis of a gonorrhoea does not so much depend upon an examination of the products of a urethral inflammation as the diagnosis of pulmonary consumption depends on an examination of the sputa. In medico-legal circles the gonococcus has demanded some attention, and it has undoubtedly been of use in some cases of interest. Although several investigators had suspected its presence as a cause of gonorrhoea, no one had done such exact work to detect it as Neisser,² of Breslau. In 1879 he made a communication to the "Centralblatt f. d. med.

Wissenschaften," in which he described what he has named the "gonococcus," or specific micrococcus of gonorrhoea.

Since this time many others have confirmed his work. In 35

¹ Read before the Baltimore Microscopical Society, April 16, 1888.

² A. Neisser: "Centralblatt f. d. med. Wissenschaft," 1879, No. 28.



cases of gonorrhœa, 7 cases of purulent ophthalmia neonatorum, 2 cases of blenorrhœal ophthalmia, he found the gonococcus. Weiss¹ found it in 32 cases of gonorrhœa. Bokai² made cultivations and inoculated successfully several students who volunteered for the cause of science. The following have also confirmed Neisser's discovery: Aufrecht,³ Ehrlich,⁴ Gaffky, Rücker,⁵ Brieger, Sadtler, Leber, Haab,⁶ Hirschberg,⁷ Krause,⁷ Königstein,⁸ Bockhart,⁹ and others. The three last carried on successfully a series of experiments in inoculations upon eyes. Ogden described organisms resembling those found in pus taken from other sources not supposed to be gonorrhœal. This statement led Keyser¹⁰ to investigate still further, and his work, done with the care of a painstaking student, is probably the most valuable contribution on this subject next to that of Neisser's. Keyser examined 67 cases of gonorrhœa and several cases of purulent ophthalmia. Three cases of what was supposed to be simple urethritis were examined and no gonococci were found.

The method of examination is very simple. A little of the pus is pressed between two cover glasses, which are then drawn apart. Then the glasses are allowed to dry, and are quickly passed through the Bunsen flame to coagulate the albumen and fix the pus. Then a few drops of the ordinary methylene blue or violet are allowed to cover the specimen for a few minutes and washed off. The specimen may at once be examined in water or glycerin, or it may be dried and mounted in balsam, which makes it more distinct. The gonococci are seen in pairs or fours, apparently in the pus cells, while the contour of the pus cells is seen to be very indistinct, due to the Abbé illuminator. Keyser says they are in the cell, and Neisser says they are on the cell. Of course, this is not easy to decide, but from my own experience in examining the gonococci and

¹ Dr. F. Weiss: "La Micro du Pus Blenorrhagique." These de Nancy, 1880, and Gazette Hebdom., November 12th, 1880. Weiss: "Annales de Dermatol.," 1881.

² A. Bokai: "Ueber das Contagion der Acuter Blenorrhœe." "Centralblatt," 1880, No. 74.

³ R. Aufrecht: "Pathologische Mitt."

⁴ Ehrlich: "Ueber Methylen blau und s. Klin. Bacterioskopische Verwendung," "Zeitschr. f. Klin. Med. 1," pg. 70, 1881.

⁵ G. Ruecker: "Ueber Polyarthrits Gonorrhœica," Deutsche Med. Woch., 1880.

⁶ O. Haab: "Kleinere Ophtalmologische Mitt.," Corres. f. Schweizer Aertzte. O. Haab: "Der Mikrokoccus der Blenorrhœa Neonatorum." Festschrift, Wiesbaden, 1881.

⁷ Hirschberg and F. Krause: "Zur Pathologie der Ansteckende Augenkrankheiten." Centralblatt f. pract. Augenheilkunde.

⁸ Königstein: "Zur Prophylaxis der Blen. Neonatorum." Vortrag gehalten in d. k. k. Gesellsch. d. Aerzte in Wien.

⁹ Bockhart: "Beitrag zur Aetiologie und Pathologie des Harnroehrestrippers." Sitzungs Ber. d. Wurz., Phys. und Med. Gesellschaft, September, 1882.

¹⁰ "Is Gonorrhœa a Bacteria Disease?" by N. A. S. Keyser, Md. Med. Journal, February 15th, 1883. Langenbeck's "Arch. f. Chirurgie."

the other micro-organism, I am inclined to think they are on the outside of the pus cell.

The best way to confirm the discovery of a micro-organism is by cultivation and inoculation. This, of course, is not possible in every case of urethritis. Another way is by a process of staining which shall exclude every other micro-organism. Dr. Gabriel Roux,¹ of Paris, says that if the preparation be first stained according to Gram,² and then be examined, and then be decolorized with alcohol and examined again, the gonococci will be seen stained at the first examination, and will be unstained after decolorization with alcohol. Allen³ and Wendt heartily confirm this. So far, I have not been doubtful in examining them myself, but as I have only looked for the gonococci in cases where gonorrhœa was undoubtedly present, my experience is of little value.

This discovery is of importance, in so far as it is one step nearer to our hope of classifying diseases in a scientific manner. Practically, it is of decided interest, as changing the mode of treatment, and thus cutting short the former length of the disease. It has also explained why some cases of apparently cured gonorrhœa break out afresh from taking stimulants after all signs and symptoms of the disease had disappeared.

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¹ Le Concour's Medical, November 13th, 1886.

² Gram's method consists in staining first with methylene blue or violet, fixing the color with a solution of iodine in the iodide of potash, and then decolorizing with alcohol.

³ "Journal of Cutaneous and Genito-Urinary Diseases," March, 1887.

